



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO.          | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------|-------------|----------------------|---------------------|------------------|
| 10/591,074               | 08/30/2006  | David McFadden       | 54330/334036        | 5969             |
| 23370                    | 7590        | 10/03/2008           | EXAMINER            |                  |
| JOHN S. PRATT, ESQ       |             |                      | BERNSTEIN, DANIEL A |                  |
| KILPATRICK STOCKTON, LLP |             |                      | ART UNIT            | PAPER NUMBER     |
| 1100 PEACHTREE STREET    |             |                      |                     | 4166             |
| ATLANTA, GA 30309        |             |                      |                     |                  |
|                          |             |                      |                     | MAIL DATE        |
|                          |             |                      |                     | DELIVERY MODE    |
|                          |             |                      |                     | 10/03/2008 PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |
|------------------------------|------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|                              | 10/591,074             | MCFADDEN, DAVID     |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |
|                              | DANIEL A. BERNSTEIN    | 4166                |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 30 August 2006.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-46 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-46 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 30 August 2006 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/07/2007</u> .  | 6) <input type="checkbox"/> Other: _____ .                        |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 11, 17, 20 and 34 recite the limitation "the thermal means". There is insufficient antecedent basis for this limitation in the claim.
3. Claim 12 recites the limitation "the control means". There is insufficient antecedent basis for this limitation in the claim.
4. Claim 17 and 19 recite the limitation "the control means". There is insufficient antecedent basis for this limitation in the claim.
5. Claim 18 and 20 recite the limitation "the damper means". There is insufficient antecedent basis for this limitation in the claim.
6. Claim 21 recites the limitation "the cooking chamber". There is insufficient antecedent basis for this limitation in the claim.
7. Claims 27 and 31 recite the limitation "the right and left side walls". There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-6, 9-11, 16, 26-33 and 41 rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,934,178 to Caridis et al. (Caridis).

Caridis teaches:

In reference to claim 1

A conveyor oven (10, Fig. 1) for cooking a food product, comprising: a cooking tunnel (Fig. 3 shows a tunnel with a conveyor belt 13) comprising: at least one cooking zone (structures 45 and 46 define separate cooking zones by each flow channel 63, Fig. 4), each cooking zone comprising: a housing defining a cooking chamber (45 and 46); a conduit means (45 and 47) for circulating gas to and from the cooking chamber (hot air enters cooking chamber through risers 61 and exits through exhaust stacks 16) ; a flow means for causing circulation of the gas (blower 48); a means for heating the gas (heating means 41, Fig. 2); a first gas directing means disposed above the food product (see annotated Fig.3 where 46 is divided into sections defined by risers 61, where the first riser is the first directing means and the second risers to the left is the second directing means); the first gas directing means being operably associated with the conduit means (45 and 47); and a second gas directing means disposed above the food product (see annotated Fig. 3), the second gas directing means also being operably associated with the conduit means (45 and 47); wherein the first and second gas directing means are configured to cause the gas from the first gas directing means to collide with the gas from the second gas directing means upon or above the upper surface of the food product (the air from the first and second conduits mix above the food product); and a conveyor (13) for conveying products through the cooking zone.

In reference to claim 2

Refer to the rejection above of claim 1 for the rejection of claim 2, because the claim language is identical except for the phrase " upon or **below** the lower surface of the food product". See annotated Fig. 3 where the air flows through first and second gas directing means below the food product.

In reference to claim 3

The oven of claim 1 further comprising: a first lower gas directing means (see annotated Fig. 3) disposed below the food product; the first lower gas directing means being operably associated with the conduit means (45); and a second lower gas directing means disposed below the food product (see annotated Fig. 3), the second lower gas directing means also being operably associated with the conduit means (45); wherein the first and second lower gas directing means are configured to cause the gas from the first lower gas directing means to collide with the gas from the second lower gas directing means upon or below the bottom surface of the food product (see rejection of claim 1 and 2).

In reference to claim 4

The oven of claim 1 wherein each cooking zone cooks the food product independently of the other cooking zones (44 and 46 are divided into sections each defining a separate cooking zone).

In reference to claim 5

The oven of claim 1 further comprising: a control means for controlling the gas flow (controlling the temperature of the oven inherently teaches controlling "gas flow", column 3 lines 56-62).

In reference to claim 6

The oven of claim 1 wherein the gas exits the cooking chamber via the top wall (exhaust 16 is located on a top wall, Fig. 1).

In reference to claim 9

The oven of claim 1 wherein the flow means is a blower motor (48).

In reference to claim 10

The oven of claim 9 wherein the blower motor runs at variable speeds (column 7 lines 43-43).

In reference to claim 11

The oven of claim 1 wherein the thermal means is an electric resistance heater (see abstract lines 8-9).

In reference to claim 16

The oven of claim 1 further comprising: an electromagnetic source (column 1 lines 23-28).

In reference to claim 26

The oven of claim 1 wherein the first gas directing means and the second gas directing means are located within a top wall (see annotated Fig. 2 for the top wall and annotated Fig. 3 for the gas directing means).

In reference to claim 27

The oven of claim 1 wherein the first gas directing means and the second gas directing means are located within the right and left side walls. The specification does not specify which walls are considered the right and left side walls and which way the walls are oriented. Therefore, the first and second gas directing means (see annotated Fig. 3) are disposed within the front wall of 10 and the back wall of 10 (Fig.1).

In reference to claim 28

The oven of claim 1 wherein the first gas directing means and the second gas directing means are located at the intersection of side walls and a top wall (the top wall intersects with the side walls and the top wall consists of the upper gas directing means, see annotated Fig. 2).

In reference to claim 29

The oven of claim 1 wherein the first gas directing means and the second gas directing means are located within a back wall (the gas directing means are contained within the housing of the oven and therefore are within a back wall and a front wall).

In reference to claim 30

The oven of claim 2 wherein the first lower gas directing means and the second lower gas directing means are located within a bottom wall (bottom wall, see annotated Fig. 2).

In reference to claim 31

The oven of claim 2 wherein the first lower gas directing means and the second lower gas directing means are located within the right and left side walls (right and left side walls, see annotated Fig. 2).

In reference to claim 32

The oven of claim 2 wherein the first lower gas directing means and the second lower gas directing means are located at the intersection of the side walls and a bottom wall (the bottom wall intersects with the side walls and the bottom wall constitutes the lower gas directing means, see annotated Fig. 2) .

In reference to claim 33

The oven of claim 2 wherein the first lower gas directing means and the second lower gas directing means are located within a back wall (the gas directing means are contained within the housing of the oven and therefore are within a back wall and a front wall).

In reference to claim 41

The oven of claim 1 further comprising: at least two additional gas directing means for direction on at least one further food product. See annotated Fig. 3 which shows at least two additional gas directing means on at least one additional food product.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Caridis in view of US Patent 2,563,253 to Levin (Levin).

In reference to claim 8

Caridis discloses the oven of claim 1, but does not teach a damper means for adjusting the amount of said gas delivered via said conduit means to said first, second, first lower and second lower gas directing means.

Levin teaches a damper means (38, Fig.1) for adjusting the amount of said gas delivered through a conduit.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the conveyor oven of Caridis with the damper means of Levin for the purpose of controlling the airflow of the individual blower fans and therefore control the amount of gas delivered through the conduit. Dampers are a well known means for controlling the airflow supplied through a conduit to a chamber. One simple example is the damper on an air vent controlling the supply of cold or hot air into a room.

12. Claims 14 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Caridis in view of US Patent 5,277,105 to Bruno et al. (Bruno).

In reference to claim 14 and 15

Caridis discloses oven control means, but is silent to the particular structure of the controls. Bruno teaches a conveyor with a rotary switch for the purpose of controlling the hot air blower (knob 48, Fig. 1). Bruno teaches that the rotary switch controls the flow means (Column 5 line 4). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the conveyor oven of Caridis with the knob of Bruno to control various functions of the oven including

the flow means. Simple rotary switches are very well known in the art and would be an obvious choice for a control interface.

13. Claims 7, 21-25 and 43 rejected under 35 U.S.C. 103(a) as being unpatentable over Caridis in view of US Patent 3,548,152 to Klepzig (Klepzig).

In reference to claim 7

Caridis teaches the oven of claim 1, but does not teach at least one odor filter. Klepzig teaches an oven with at least one catalytic filter (column 2 lines 60-62). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the conveyor oven of Caridis with the filter of Klepzig for the purpose of reducing odor. It is well known in the art to use a catalytic filter to reduce odor and remove contaminates from the exhaust gas.

In reference to claim 43

The oven of claim 7 wherein the odor filter is a catalytic odor filter (Klepzig column 2 lines 61-62). As evidenced by Diachuk (4,350,504), catalytic filters control odors (column 8 lines 5-20).

In reference to claim 21

Caridis teaches an oven as defined in claim 1 further comprising: an egress opening to allow the gas to exit the cooking chamber (gas exits the cooking chamber through exhaust stack 16 and also at the outlet 12, Fig. 1). However, Caridis does not teach a catalyst located within said egress opening. Klepzig teaches a catalytic filter located where gas exits a cooking chamber (57, Fig. 1). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine

the conveyor oven of Caridis with the catalytic filter of Klepzig, because as stated above in the rejection of claims 7 and 43 it is well known in the art to use a catalytic filter to reduce odor and remove contaminates from the exhaust gas and it would have been obvious to place the filter where gas exits the cooking chamber.

In reference to claim 22-25

Caridis in view of Klepzig teaches wherein said egress opening is located in a top wall of the cooking chamber (the exhaust exits the chamber through stack 16 which is on the top wall. Caridis in view of Klepzig does not teach that the egress opening is located on the side wall, back wall or the bottom wall.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to shift the location of the egress opening for the purpose of removing the exhaust fumes from the desired location. The function of removing contaminates from the exhaust fumes would not be affected by the location of the egress opening as long as the fumes passed through the filter before exiting the chamber.

14. Claims 12 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Caridis in view of US Patent 4,924,763 to Bingham (Bingham).

In reference to claim 12

Caridis teaches the oven of claim 1, but is silent to a control means with a toggle switch. Bingham teaches a compact pizza oven with toggle switches that controls the blowers or fans (column 4 lines 27-29). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the conveyor

oven of Caridis with the toggle switches of Bingham to control the fans of Caridis. Caridis is silent as to the specifics of his controls for operating the conveyor oven. The oven of Caridis would obviously include some type of control feature to operate the oven. Furthermore, it is common in the art to control the operation of a fan with a simple toggle switch that turns the fan motor on or off. This feature can be found extensively in prior art and therefore would be an extremely obvious feature to add to an oven.

In reference to claim 13

The oven of claim 12 wherein the toggle switch controls the flow means (Bingham column 4 lines 27-29).

15. Claims 16-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Caridis in view of Bruno in view of US Patent 5,717,192 to Dobie et al. (Dobie) and in further view of Bingham.

In reference to claim 16-20

Caridis teaches the oven of claim 1 and mentions the advantage and disadvantage of combining a conventional oven with a microwave generator for impingement cooking. Dobie explicitly teaches the combination of the two (Fig. 2 and 3 shows heating elements 32 and 34 and magnetron 115). Dobie also teaches controls for the microwave and the upper and lower blowers (M, 54a and 65a, Fig. 1). Dobie is silent to the controls for a damper, but he mentions the use of dampers to control the proportion of air delivered to upper and lower air dispensers. Bruno teaches a damper (see rejection of claim 8) and control means (see rejection of claims 14 and 15).

Bingham teaches a toggle switch, see rejection of claims 12 and 13. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the conveyor oven of Caridis with the microwave of Dobie because as stated by Caridis, combined use of conventional cooking means such as using temperature controlled gas to cook food with microwave generators to further impinge food so as to decrease the cooking time is well known in the art.

In regards to claim 17, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the conveyor oven of Caridis with the microwave and microwave controls of Dobie with the controls of Bruno, because when Dobie is combined with Caridis it would have been obvious to add an independent control for the microwave as explicitly taught by Dobie (M, Fig. 1). Please refer to the rejection 8, 14 and 15 for the 103 obviousness rational for combining Caridis and Bruno.

In regards to claim 18, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine Caridis with Dobie, Bruno and Bingham to use toggle switches to control the electromagnetic source, the damper means, the flow means, and the thermal means, because as stated in the rejection of claims 12 and 13, the use of a toggle switch is well known in the art and obvious.

In regards to claim 19, Bruno teaches the use of rotary switches and it would have been obvious to use them in view of the combination as stated above. Merely stating the use of various switches to interface the controls does not change the

functionality of the means for which they are controlling, and therefore is an obvious design choice that only affects the ascetics of the device.

In regards to claim 20, Bruno teaches a control panel (Fig. 3) in which his various controls are mounted.

16. Claims 34-36 rejected under 35 U.S.C. 103(a) as being unpatentable over Caridis in view of US Patent 6,655,373 to Wiker (Wiker).

In reference to claim 34-36

Caridis discloses wherein the thermal means is a heater (oven heating means 41), but is silent to whether the heating means is powered by gaseous fuel (Caridis mentions using a “direct open flame”).

Wiker teaches a conveyor oven similar to that of Caridis that teaches the use of gaseous fuel (natural gas and propane, column 3 lines 12-14). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine Caridis and Wiker for the purpose of using either propane or natural gas as a fuel for a heater in a conveyor oven, because there are a limited number of appropriate choices for fuel to power a gaseous heater and they are obvious choices based on preference and availability.

17. Claim 37 rejected under 35 U.S.C. 103(a) as being unpatentable over Caridis in view of US Patent 6,012,442 to Faraj (Faraj).

In reference to claim 37

Caridis discloses different heating means such as gas, electric or thermo fluid heaters, but does not teach a speed cooking oven.

Faraj teaches a speed cooking oven where food is heated from all sides to speed up the cooking time (see Fig. 1, where charcoal can be placed on shelves 35 and 36 to surround the food product).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the conveyor oven of Caridis with the speed cooking oven of Faraj for the purpose of cooking the food product faster without increasing the temperature of the gas and burning the food product.

18. Claim 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Caridis in view of US Patent 4,737,373 to Forney (Forney)

In reference to claim 38

Caridis discloses different heating means such as gas, electric or thermo fluid heaters, but he does not teach a conventional cooking oven.

Forney teaches a conventional oven (column 1 lines 53-58) where food is cooked at a slower rate.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the conveyor oven of Caridis with Forney for the purpose of cooking a product like meat which when cooked at a slower rate retains more flavor and tastes better.

19. Claim 39 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,114,664 to Cook et al. (Cook).

In reference to claim 39

Caridis discloses different heating means such as gas, electric or thermo fluid heaters, but he does not teach an accelerated cooking oven.

Cook teaches an accelerated cooking oven (column 4 lines 44-59) which uses a convection heater in combination with a fan in order to accelerate the cooking process.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the conveyor oven of Caridis with Cook for the purpose of cooking the food product at a faster rate and increasing the conveyor output of the food product.

20. Claim 40 rejected under 35 U.S.C. 103(a) as being unpatentable over Caridis in view of US Patent 5,927,265 to McKee et al. (McKee).

In reference to claim 40

Caridis discloses a conveyor oven, but does not teach a recycling oven where most of the heated air is recirculated instead of vented to the atmosphere.

McKee teaches a recycling oven (column 2 and 3 lines 55-67 and 1-10).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the conveyor oven of Caridis with McKee for the purpose of recycling the heated air so as to increase the efficiency of the oven and lower the cost of operation.

21. Claim 42 rejected under 35 U.S.C. 103(a) as being unpatentable over Caridis in view of US Patent 6,713,741 to Miller.

In reference to claim 42

Caridis teaches the oven of claim 1 and a cooking tunnel with openings on both ends of the conveyer, but does not teach an ingress door disposed at one end of the cooking tunnel and an egress door disposed at the other end of the cooking tunnel and a plurality of sealing means carried by the conveyor for providing a seal between the ingress door and the cooking tunnel and between the egress door and the cooking tunnel.

Miller teaches a conveyor oven similar to that of Caridis. Miller teaches an ingress door disposed at one end of the cooking tunnel (door 15 with absorption material 25 along the bottom to facilitate sealing the door, Fig. 1); an egress door disposed at the other end of the cooking tunnel (second door 15, Fig.1); a plurality of sealing means carried by the conveyor for providing a seal between the ingress door and the cooking tunnel and between the egress door and the cooking tunnel (both doors 15 have seal 25).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the conveyor oven of Caridis with the doors of Miller so that the oven chamber can minimize heat loss or dissipation of microwaves. The use of doors could also be advantageous during cleaning of the oven and has been used extensively in conveyor ovens and regular ovens.

22. Claims 44-46 rejected under 35 U.S.C. 103(a) as being unpatentable over Caridis in view of US Patent 6,250,296 to Norris et al.

In reference to claim 44

Caridis discloses the oven of claim 1, but does not teach a bleed gas flow system further comprising: a gas bleed chamber and an odor filter within the gas bleed chamber. Norris teaches a bleed gas flow system (column 11 lines 10-28) further comprising: a gas bleed chamber (return air chamber 28b), and an odor filter within the gas bleed chamber (filters 130 and 132 and catalytic converters 162 disposed in the return air chamber of the oven).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the conveyor oven of Caridis with the recirculating air system of Norris for the purpose of increasing the efficiency of the oven by reusing the exhaust gases.

In reference to claim 45

Caridis in view of Norris teaches an odor filter that causes catalytic destruction of cooking by-products (catalytic converters 162, Norris).

In reference to claim 46

Caridis in view of Norris teaches pre-heater to heat the bleed gas flow prior to the gas entering the catalytic odor filter (air is heated in the return air chamber 28b, column 11 lines 20-25, Norris).

***Conclusion***

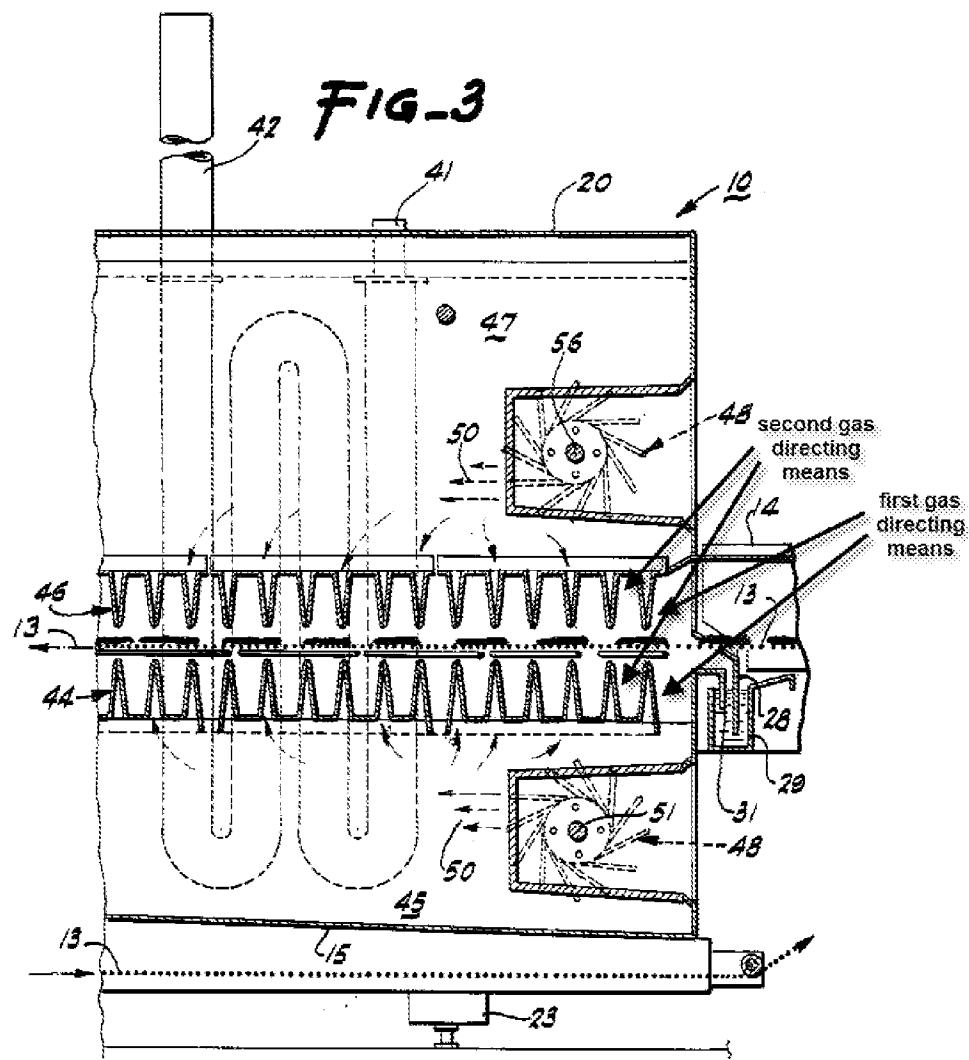
23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL A. BERNSTEIN whose telephone number is

(571)270-5803. The examiner can normally be reached on Monday-Friday 8:00 AM - 5:00 PM EDT.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Bomberg can be reached on 571-272-4922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DAB

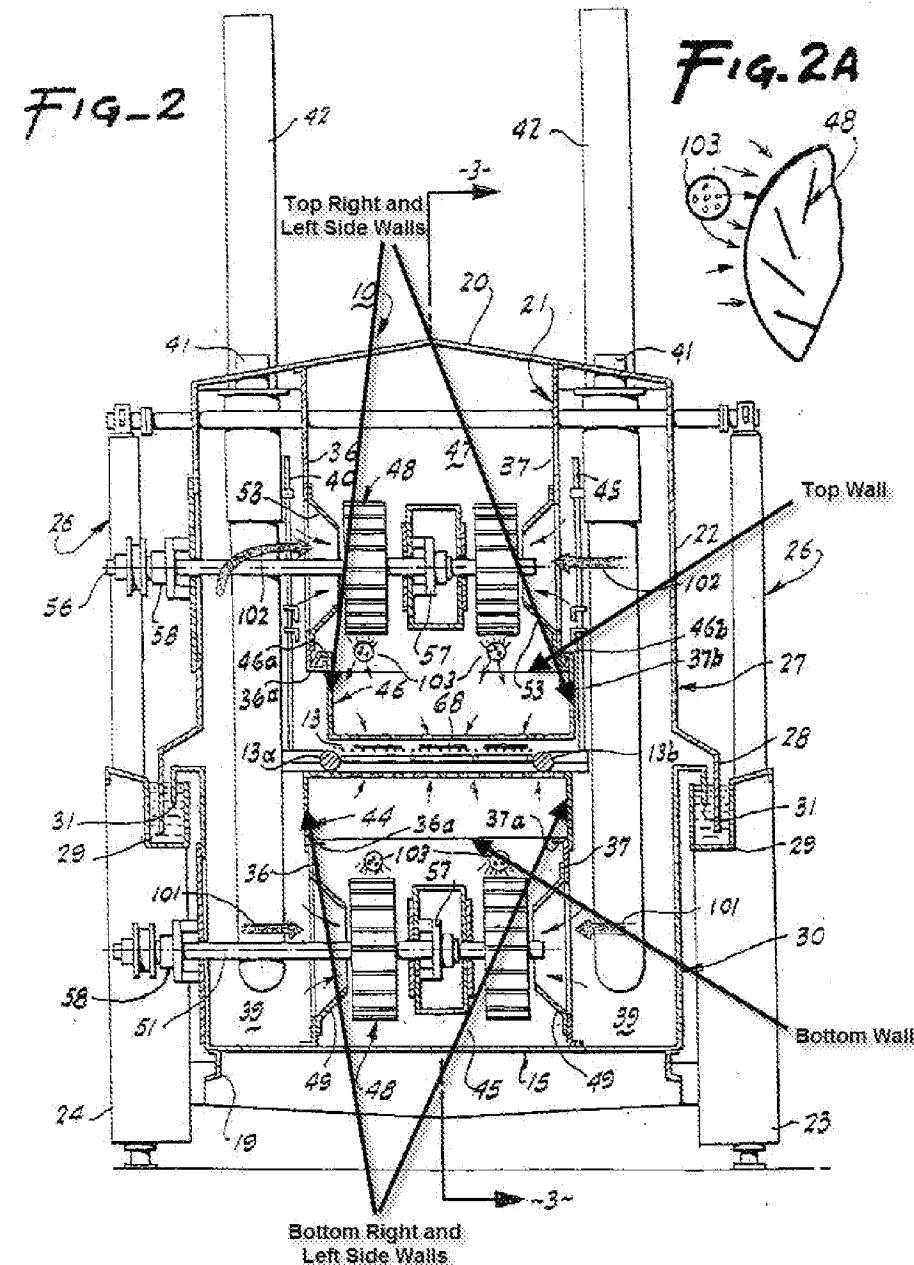


U.S. Patent

Aug. 10, 1999

Sheet 2 of 5

5,934,178



/Kenneth B Rinehart/

Supervisory Patent Examiner, Art Unit 3749